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Ohio Agricultural Research and Development Center
College of Food, Agricultural, and Environmental Sciences

Soy as a Possible Preventative Measure for Prostate Cancer Risk

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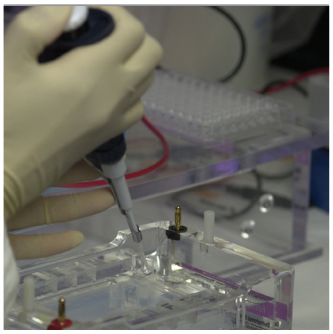
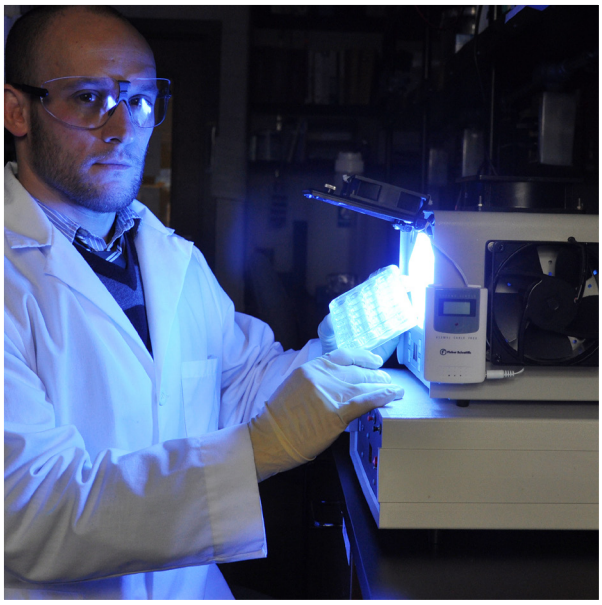


Background

According to the Centers for Disease Control and Prevention, prostate cancer is the most common form of cancer and the second leading cause of cancer deaths among men in the United States. Increased consumption of isoflavones, organic compounds found primarily in soy, may be associated with a reduced risk for prostate cancer. However, the mechanisms by which soy isoflavones reduce cancer risk are not well characterized. Understanding these anticancer mechanisms is an important step in the development of dietary recommendations to reduce cancer risk and may also lead to the development of new food products with increased health benefits. This project was awarded a SEEDS grant to further research on soy use as a possible measure for reducing prostate cancer risk.

Objectives

The overall goal of this study was to examine the ability of glycitein, an isoflavone found in soy, to modulate cellular and molecular processes associated with prostate cancer development. Two primary objectives were proposed. The first objective aimed to characterize the involvement of the vascular endothelial growth factor (VEGF) receptor in mediating effects of glycitein on signaling pathways associated with growth of prostate epithelial cells. The second research objective was to examine the influence of glycitein on proliferation and differentiation of prostate epithelial cells.



Impacts

To date, scientists have further elucidated the role of the VEGF receptor in mediating glycitein's effect on cellular signaling in the prostate. This work has identified a novel mechanism by which soy isoflavones exert their anticancer activity in the prostate. These findings were recently published in *The Journal of Nutritional Biochemistry*.

In addition, researchers have data suggesting that glycitein can influence prostate cell differentiation. Scientists believe that the ability of glycitein to influence cellular differentiation in the prostate may reduce the loss of critical cells in this tissue during the cancer process. A manuscript detailing these findings has recently been accepted for publication in *Nutrition and Cancer: An International Journal.* Collaborations are already in the works to further this research, as its potential impacts could be greatly beneficial for combating prostate cancer.

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